# A Key to the Genera of the Ophichthid Eels, with Descriptions of Two New Genera and Three New Species from the Eastern Pacific[1]

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ABSTRACT: A key is presented to distinguish the 44 recognized genera of the Ophichthidae. Two new genera are described: *Ethadophis,* represented by *E. byrnei* n. sp. (the genotype) and *E. merenda* n. sp., and *Leuropharus* (genotype *L. lasiops* n. sp.). The following new generic synonymies are proposed: *Omochelys* Fowler 1918 = *Pisoodonophis* Kaup, 1856; *Hesperomyrus* Myers and Storey, 1939 = *Myrophis* Lütken, 1851; *Cryptopterygium* Ginsburg 1951 = *Callechelys* Kaup, 1856.

THE UNSATISFACTORY STATE of classification of eels of the family Ophichthidae has been pointed out in the past (Myers and Storey, 1939; Gosline, 1951; Böhlke, 1960). Difficulty in allocating our eastern Pacific material has led us to a reexamination of the genera of the Ophichthidae. In our study we have examined species of all but two nominal genera of the family. The problematical genus *Gordiichthys* (genotype *G. irretetus*), often placed in the Congridae, was not considered. *Gordiichthys springeri* Ginsburg, 1951, is an ophichthid referable to the genus *Callechelys*. We recognize 44 genera, which are distinguished in the key given below. This key should be regarded as provisional, as it is based chiefly on external characters, and we have not been able to examine all described species of all genera. It is regrettable, but not surprising, that the material of the new forms should be so meager, as the fossorial habit of ophichthids makes them inaccessible by most normal collecting methods.

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## KEY TO THE GENERA OF OPHICHTHIDAE

1a. Caudal present, confluent with dorsal and anal, externally visible; tail tip flexible ..... Subfamily Echelinae ..... 2
1b. Tip of tail finless ..... Subfamily Ophichthinae ..... 10

2a. Posterior nostril lateral, above lip ..... 3
2b. Posterior nostril labial, at edge of mouth, or opening into mouth ..... 4

3a. Snout subconical; dorsal origin less than a head length behind gill openings ..... *Neenchelys* Bamber, 1915
3b. Snout broad, tumid in one species; dorsal origin two head lengths behind gill openings ..... *Pseudomyrophis* Wade, 1946

4a. Pectorals absent ..... 5
4b. Pectorals present, sometimes represented by a tiny dermal flap near upper edge of gill opening ..... 8

5a. Gill openings low on sides, converging forward onto ventral surface; dorsal-fin origin on head before gill openings ..... *Leptenchelys* Myers and Wade, 1941
5b. Gill openings midlateral, a constricted opening about equal to eye; dorsal-fin origin behind gill openings ..... 6

6a. A prominent median toothed groove on ventral side of snout, bordered by dermal folds, extending anteriorly to anterior nostrils; anterior nostrils elongated tubes equal to eye in length ..... *Schismorhynchus* McCosker, 1970
6b. Ventral side of snout without a prominent median groove bordered by dermal folds; anterior nostrils less than eye in length ..... 7

7a. Teeth absent on vomer, absent or embedded on intermaxillary, those on maxillary and dentary minute or villiform; dorsal-fin origin behind anus ..... *Schultzidia* Gosline, 1951
7b. Teeth present on intermaxillary, maxillary, dentary, and vomer; dorsal-fin origin either before or behind anus ..... *Muraenichthys* Bleeker, 1853

8a. Vomerine teeth in a broad band, notably wider near middle of shaft of vomer; maxillary and dentary teeth in bands; dorsal origin over tips of pectorals or nearly so ..... *Echelus* Rafinesque, 1810
8b. Vomerine teeth, if present, uniserial, or in a narrow band which does not broaden near middle of length; teeth in jaws in 1, 2, or 3 rows anteriorly, sometimes becoming uniserial posteriorly or uniserial throughout their length; dorsal origin from behind gill opening to behind anus ..... 9

9a. Vomerine teeth present; dorsal origin before anus *Myrophis* Lütken, 1851
9b. Vomerine teeth absent; dorsal origin above or behind anus ..... *Ahlia* Jordan and Davis, 1892

10a. Pectorals absent ..... 11
10b. Pectorals present ..... 23

11a. Dorsal fin, if present, originating above or behind gill opening, or no more than length of gill opening before it; head and body more or less cylindrical ..... 12
11b. Dorsal origin at or just behind occiput, in advance of gill opening by more than length of gill opening; head region, at least, laterally compressed ..... 17

12a. Gill opening low-lateral, vertical, isthmus wider than gill opening length; canine teeth on shaft of vomer and intermaxillary .... *Achirophichthys* Bleeker, 1865
12b. Gill opening inferior, parallel or converging forward, isthmus narrower than gill opening length; no canine teeth ..... 13

13a. Dorsal and anal fins low but distinct; (posterior nostril in upper lip, covered with a flap) ..... 14
13b. All fins absent; (posterior nostril either in upper lip and covered with a flap, or a round opening outside mouth) ..... 15

14a. Gill membrane with an anterolateral duplication forming a pouch ..... *Caecula* Vahl, 1794
14b. Gill membrane without a duplication ..... *Pantonora* Smith, 1964

15a. Upper lip with a conspicuous fringe ..... *Cirricaecula* Schultz, 1953
15b. Upper lip entire ..... 16

16a. Posterior nostril opening inside mouth, with or without a flap ..... *Sphagebranchus* Bloch, 1795
16b. Posterior nostril opening outside of mouth, with a flap ..... *Verma* Jordan and Evermann, 1896

17a. Only fin a short dorsal originating just behind occiput and ending less than a head length behind gill opening ..... *Phaenomonas* Myers and Wade, 1941

17b. Dorsal beginning on head and ending shortly before tail tip; anal present, except in *Letharchus* ..... 18

18a. Anal fin absent; (dorsal fin elevated) ..... *Letharchus* Goode and Bean, 1882
18b. Anal fin present; (dorsal low or elevated) ..... 19

19a. Anterior nostril not tubular, its rim not raised, developed as an opening with lateral projections into it ..... *Caralophia* Böhlke, 1965
19b. Anterior nostril tubular ..... 20

20a. A median groove on underside of snout (Fig. 1*a*) *Callechelys* Kaup, 1856
20b. Median groove on underside of snout absent (Fig. 1*b*) ..... 21

21a. Gill openings vertical, isthmus as wide as or wider than gill openings; intermaxillary and shaft of vomer toothed; dorsal and anal fins forming subdermal ridges ..... *Ethadophis* new genus
21b. Gill openings converging forward, isthmus narrower than gill openings; either intermaxillary or shaft of vomer toothless; dorsal and anal fins low but distinct ..... 22

22a. Skin of head and underside of snout smooth; intermaxillary toothless, a few teeth on shaft of vomer ..... *Aprognathodon* Böhlke, 1967
22b. Top of head, snout, and much of mandible covered by papillae, underside of snout with complex folds; intermaxillary toothed, teeth absent on shaft of vomer ..... *Leuropharus* new genus

23a. Teeth molariform or granular; pectorals broad-based (Fig. 2*a*) ..... 24
23b. Teeth pointed; pectoral base restricted, opposite upper half of gill opening (Fig. 2*b*) ..... 25

24a. Dorsal origin in advance of gill openings; pectoral short, eye twice or less in pectoral length ..... *Myrichthys* Girard, 1859
24b. Dorsal origin above or behind gill opening; pectoral moderate, eye twice or more in pectoral length ..... *Pisoodonophis* Kaup, 1856

25a. Upper lip fringed (Fig. 3) ..... 26
25b. Upper lip entire; (narial barbels may be present) ..... 29

26a. Lower lip fringed; body and tail subequal; jaws subequal; canine teeth in jaws and on vomer ..... *Brachysomophis* Kaup, 1856
26b. Lower lip entire; tail much longer than head and trunk; lower jaw included; no canine teeth ..... 27

27a. Dorsal origin just behind, over, or just before gill opening; eye before midpoint of mouth length; pectoral long, about twice in head ..... *Cirrhimuraena* Kaup, 1856
27b. Dorsal origin at or before midpoint of head; eye over midpoint of mouth length; pectoral shorter, 3–4 in head ..... 28

28a. Vomerine teeth uniserial anteriorly; pectoral angulate ..... *Jenkinsiella* Jordan and Evermann, 1905
28b. Vomerine teeth in a teardrop-shaped patch narrowed posteriorly; pectoral rounded ..... *Calamuraena* Günther, 1870

29a. Dorsal on head in advance of gill openings ..... 30
29b. Dorsal origin above or behind gill openings ..... 32

30a. Pectoral well developed, longer than snout, longer than broad ..... *Malvoliophis* Whitley, 1934

30b. Pectorals rudimentary, shorter than snout, broader than long ..... 31

31a. Anterior nostril tubular; head and trunk equal to or longer than tail ..... *Bascanichthys* Jordan and Davis, 1888

31b. Anterior nostril a large circular cup on a short and narrow peduncle; tail longer than head and trunk ..... *Cyclophichthys* Whitley, 1951

32a. Eye superior, before middle of upper jaw (mouth large) ..... 33

32b. Eye not superior, over middle of upper jaw ..... 37

33a. Anterior teeth of both jaws long fang-like canines extending far outside mouth when it is closed; (lower jaw extends beyond snout; lateral line on head with reduced complement of pores) ..... *Aplatophis* Böhlke, 1956

33b. Anterior teeth in jaws not fangs extending beyond snout tip ..... 34

34a. Teeth on vomer and dentary uniserial ..... 35

34b. Teeth on vomer and dentary biserial ..... 36

35a. Head and trunk much longer than tail; teeth of maxilla uniserial for most of its length, a short outer row posteriorly; pectoral short, about 10 in head, equal to gill openings; anterior nostrils directed downward ..... *Scytalichthys* Jordan and Davis, 1892

35b. Head and trunk about equal to tail; maxillary teeth in a band 4 rows wide in middle of jaw; pectoral longer, about 6 in head, longer than gill openings; anterior nostrils directed laterally ..... *Xyrias* Jordan and Snyder, 1901

36a. Snout constricted, then with an expansion, tip spoon-shaped; teeth on vomer much enlarged ..... *Mystriophis* Kaup, 1856

36b. Snout narrowing evenly to tip; teeth on vomer not much enlarged ..... *Echiopsis* Kaup, 1856

37a. Snout very long, attenuate, clavate at tip, its length greater than one-fourth of head length; jaws slender and elongate, incapable of closing completely ..... *Ophisurus* Lacépède, 1800

37b. Snout moderate or short, one-fourth of head length or less; jaws not slender and elongate ..... 38

38a. Jaws equal; snout tip blunt; narial barbels pendant and conspicuous ..... *Pogonophis* Myers and Wade, 1941

38b. Snout overhanging lower jaw; snout tip rounded to pointed; barbels on upper lip present or absent, not pendant and conspicuous ..... 39

39a. Pectoral rudimentary, much smaller than eye ..... *Quassiremus* Jordan and Davis, 1892

39b. Pectoral well developed, larger than eye ..... 40

40a. Vomerine teeth absent, or 1–3 ..... 41

40b. A series of teeth on vomer ..... 42

41a. Conspicuous leaflike appendages on anterior nostrils; head and trunk equal to or greater than tail ..... *Phyllophichthus* Gosline, 1951

41b. No leaflike appendages on anterior nostrils; head and trunk equal to or less than tail ..... *Leiuranus* Bleeker, 1853

42a. Head and trunk longer than tail; (dorsal origin above gill opening) ..... *Microdonophis* Kaup, 1856

42b. Tail longer than head and trunk; (dorsal origin behind head, from over gill opening to slightly behind pectorals) .....43

43a. Anterior nostril a broad tube, flared at tip; intermaxillary block hooked downward, and intermaxillary teeth directed horizontally backward ..... *Zonophichthus* Whitley, 1930

43b. Anterior nostril tubular, not flared distally; intermaxillary teeth erect, tips hooked back ..... *Ophichthus* Ahl, 1789

We consider the following commonly recognized nominal genera to be synonymous: *Lamnostoma* Kaup 1856 = *Caecula* Vahl 1794 (fide Smith 1964); *Chlevastes* Jordan and Snyder 1901 = *Myrichthys* Girard 1859; *Omochelys* Fowler 1918 = *Pisoodonophis* Kaup 1856; *Machaerenchelys* Fowler 1937 = *Leiuranus* Bleeker 1853; *Hesperomyrus* Myers and Storey 1939 = *Myrophis* Lütken 1851 (our studies indicate that the generic type of *Hesperomyrus, H. fryi* Myers and Storey 1939, is a junior synonym of *Myrophis vafer* Jordan and Gilbert 1882); *Cryptopterygium* Ginsburg 1951 = *Callechelys* Kaup 1856.

### *Ethadophis* n. gen.

*Diagnosis*

Dorsal and anal ending before tip of tail; tail tip fleshy rather than hard and pointed. Pectorals absent. Gill openings low on side with major axis almost vertical. Dorsal and anal developed as subdermal ridges. Dorsal origin before gill opening, termination near tail tip.

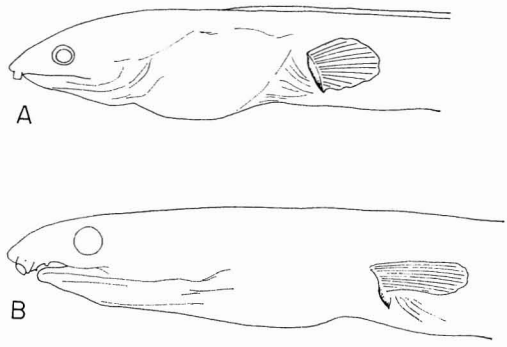


FIG. 2. Diagrammatic representation of head and pectoral fin of two ophichthids. *A*, Pectorals broad-based (23a in key); *B*, pectoral base restricted (23b in key).

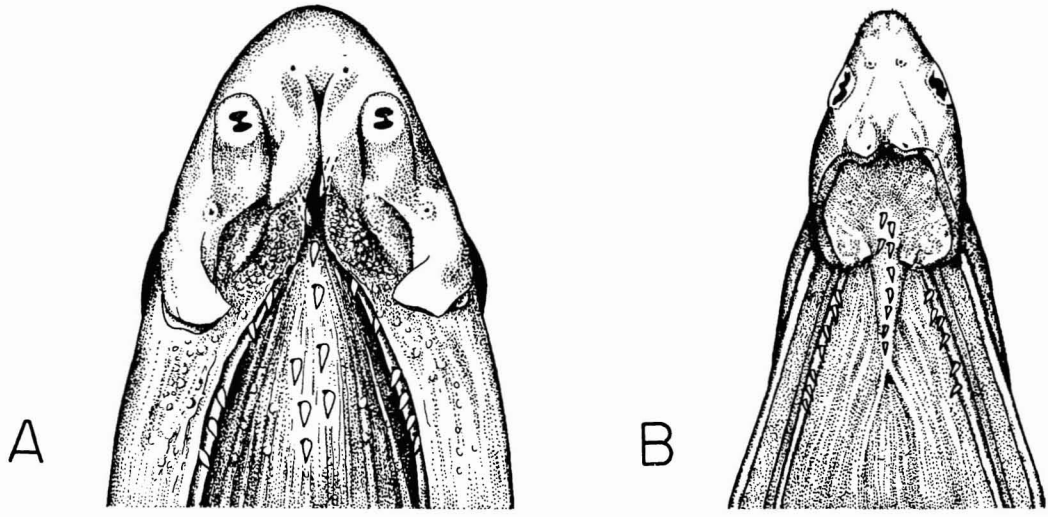


FIG. 1. Diagrammatic representation of underside of eel snout. *A*, Median groove present (20a in key); *B*, median groove absent (20b in key).

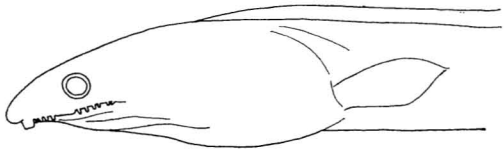

FIG. 3. Diagrammatic representation of an ophichthid with a fringed upper lip (25a in key).

Head and trunk equal to or slightly longer than tail. Underside of snout not grooved.

*Description*

Body cylindrical anteriorly, becoming compressed posteriorly. Tail tip blunt and fleshy. Lateral line present. Snout rounded, overhanging lower jaw, with intermaxillary teeth exposed. Eye small, over middle third of mouth length. Anterior nostrils in a short tube near tip of snout. Posterior nostrils inside mouth, just before level of eye, in a short tube with an anterior flap. Teeth conical and pointed. Tongue adnate. Branchial basket expanded, free branchiostegals (jugostegalia) present.

Gill openings crescentic, low on body, extending onto ventral surface so that isthmus is about equal to gill opening length; major axis vertical.

Dorsal and anal fin rays present, but fins visible externally only as skin-covered ridges. Skin smooth except for tail tip and anterior region of head, which have numerous fine papillae.

GENERIC TYPE: *Ethadophis byrnei* n. sp.

ETYMOLOGY: From the Greek ἔθας (*ethas*), customary or ordinary, and ὄφις (*ophis;* masculine), serpent, commonly applied to the snake eels; so named because of the lack of outstanding morphological characters.

*Relationships*

The generic classification of the Ophichthidae is at present based primarily on a limited number of external characters. Although *Ethadophis* resembles certain ophichthine genera that lack pectoral fins, we hesitate to state that it is thereby to be regarded as related to them. *Ethadophis* is distinguished in the key given above from the other genera of ophichthids. In preparing the key we have examined species of all genera except *Neenchelys* and *Malvoliophis.*

KEY TO THE SPECIES OF *Ethadophis*

A. Body depth at anus 75 times in total length; intermaxillary tooth patch exposed when jaw is closed; lateral line canal looped upward between pores; dorsal and anal confluent with caudal beneath skin, vertebrae 189 ..... *E. byrnei* n. sp.

B. Body depth at anus 56 times in total length; only first intermaxillary tooth exposed when jaw is closed; lateral line canal nearly straight between pores; caudal rays absent, last dorsal and anal rays well before tail tip; vertebrae 159 ..... *E. merenda* n. sp.

***Ethadophis byrnei*** n. sp.

Figs. 4, *6B*

Holotype and only known specimen, SIO 67-31, a 508-mm individual from Puertecitos, Baja California Norte, Mexico. Collected by hand by John Byrne and Mark Aeder on 23 March 1967.

DESCRIPTION (measurements in millimeters): Total length 508, head 37.5, trunk 223, tail 248, predorsal 20.5, body depth at gill opening 7.8, at anus 6.8, snout 5.3, tip of snout to corner of mouth 10.6, eye diameter 1.2, gill opening height 2.7, isthmus width 3.3. Vertebrae 189; 91 to anal origin.

Body elongate (depth at anus 75 in total length). Head and trunk 1.9 and head 13 in total length. Snout rounded; bluntly conical when viewed from above. Lower jaw included, its tip well behind anterior nostrils; intermaxillary teeth exposed. Center of eye almost opposite midpoint of upper jaw.

Teeth in jaws mostly uniserial, last few teeth on left maxilla paired. Intermaxillary teeth in a short V. Vomerine teeth paired anteriorly, mostly uniserial on shaft. Intermaxillary and vomerine teeth slightly larger than jaw teeth.

Head pores reduced, but preoperculomandibular, temporal, postorbital, suborbital, and supraorbital series present. A single temporal pore, and 5 pores along mandible. Lateral line beginning on head; canal visible beneath skin, arching upward between pores on head and sides, becoming straight between last 20 pores. Total lateral line pores 170; first 10 before gill opening. Last pore about 0.7 head lengths before tail tip. Dorsal origin slightly less than a

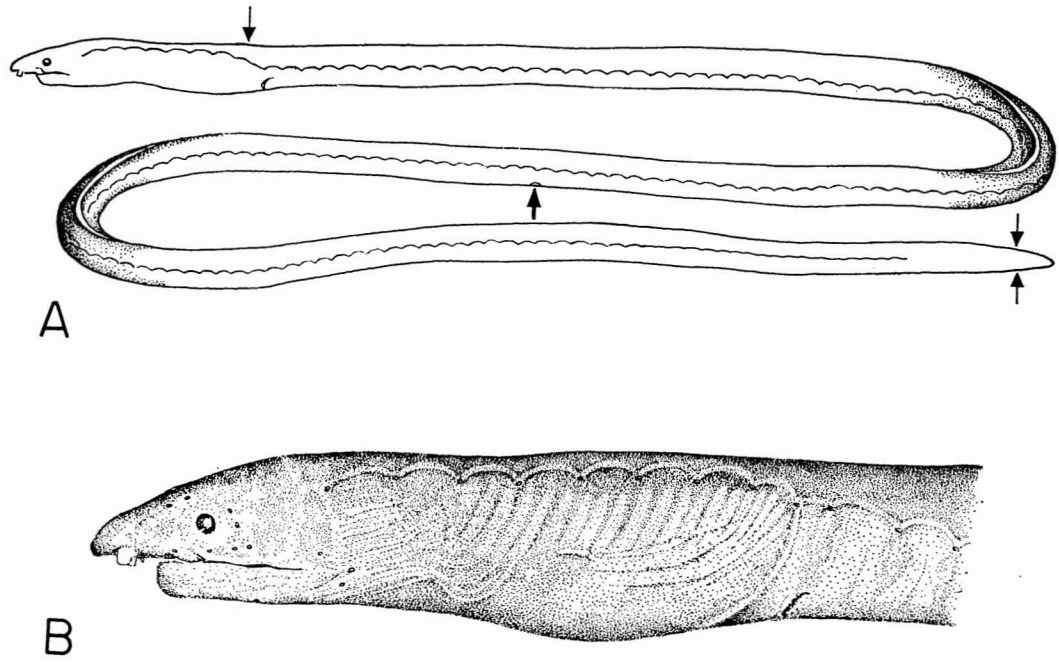


FIG. 4. Holotype of *Ethadophis byrnei* n.sp.; total length 508 mm. *A,* Side view; *B,* head region.

snout length in advance of gill opening; anal origin immediately behind vent. Dorsal disappears slightly more than a snout length before tail tip; anal disappears slightly before dorsal. Radiographs show that the dorsal and anal rays continue and are confluent with the caudal rays, but become notably shorter at the point at which the fins disappear beneath the skin.

Color in life pink, with an inconspicuous dusting of fine melanophores; in alcohol gray, somewhat darker dorsally; ridge of dorsal fin white.

REMARKS: The normal habitat of this eel remains unknown. The holotype was collected alive by hand at low tide on an exposed sand flat in the northern portion of the Gulf of California, where the tide range is about 18 feet. According to the collectors, the specimen was about 75 yards from the water's edge, with its head protruding from the dry surface sand.

ETYMOLOGY: Named for one of the collectors, the late John Byrne.

***Ethadophis merenda*** n. sp.

Figs. 5, *6A*

Holotype and only known specimen, SIO 65-47, a 530-mm individual taken from the stomach of a white sea bass, *Cynoscion nobilis,* at Thurloe Bay (27°38′N, 114°50′W), Baja California, Mexico, by Homer Moore on 9 January 1965.

DESCRIPTION (measurements in millimeters): Total length 530; head 38.7; trunk 282; tail 209; dorsal origin 27.5; body depth at gill opening 9.7, at anus 9.5; snout 5.9; tip of snout to corner of mouth 10.1; eye diameter 1.0; gill opening height 3.4; isthmus width 4. Vertebrae 159; 87 to anal origin.

Body elongate (depth at anus 56 in total length). Head and trunk 1.6 and head 14 in total length. Snout rounded; tip slightly bulbous. Lower jaw included, its tip just behind anterior nostrils; only first intermaxillary tooth exposed. Center of eye behind midpoint of upper jaw by a distance equal to prenarial distance.

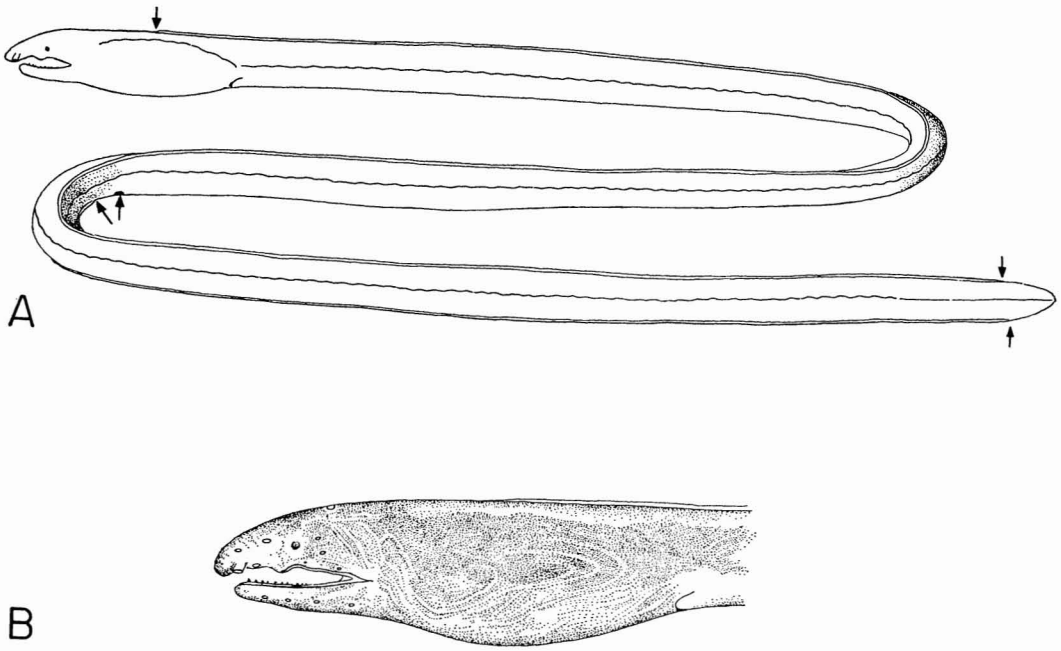


FIG. 5. Holotype of *Ethadophis merenda* n.sp.; total length 530 mm. *A,* Side view; *B,* head region.

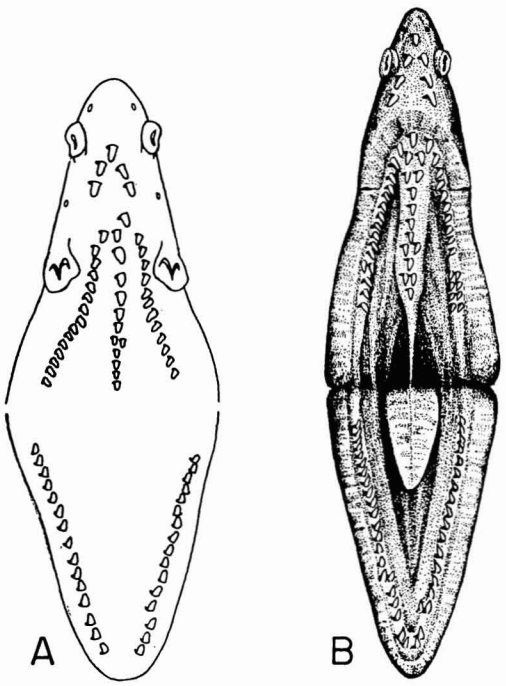


FIG. 6. Dentition of the holotypes of the species of *Ethadophis. A, E. merenda; B, E. byrnei.*

Teeth uniserial. Intermaxillary teeth in a short V. Vomerine teeth in a single row, except for a single lateral tooth posteriorly. Intermaxillary and anterior vomerine teeth slightly larger than those on jaws and shaft of vomer.

Head pores reduced, but preoperculomandibular, temporal, postorbital, suborbital, and supraorbital series present. A single supratemporal pore, and 5 pores along mandible. Lateral line indistinct because of condition of specimen, but last pore clearly about 0.7 head lengths before tail tip. Dorsal origin 1.5 snout lengths before gill opening; anal origin immediately behind anus. Dorsal disappears 1.25 snout lengths before tail tip; anal disappears shortly behind end of dorsal. Dorsal and anal continue beneath skin but end well before tail tip. Caudal rays lacking.

Gill arches removed, and cleared and stained. First basibranchial ossified, second absent, third and fourth cartilaginous. Ceratobranchials 1–4 ossified, fifth absent. Hypobranchials 1 and 2 ossified, 3 cartilaginous. Lower pharyngeal teeth in sub-rectangular patches restricted to anterior part of fourth ceratobranchial. Dorsal elements

of gill arches corresponding to Nelson's (1966) illustrations of *Caecula platyrhyncha,* except that the tooth-bearing plates (UP3 and UP4 of Nelson) appear to be fused.

Color in alcohol mostly brown; light ventrally; ridge of dorsal fin white.

ETYMOLOGY: From the Latin *merenda,* afternoon snack, in reference to the mode of capture of the type specimen.

REMARKS: In general appearance, the specimen on which this species is based is similar to the much smaller holotype of *Leptenchelys vermiformis* Myers and Wade, which we have before us. We have placed *Leptenchelys* in the Echelinae because of the presence of a caudal fin in the type of *L. vermiformis.* The similarities include most of the body proportions, the development of the vertical fins, the presence of fine papillae on the head (also, however, present near the region of the tail tip in *Ethadophis merenda*), and the number of vertebrae (163 in the type of *Leptenchelys vermiformis*). The major differences are the absence of caudal rays and the presence of grooves, in which the dorsal and anal run posteriorly, in the type of *Ethadophis merenda.* There are also differences in dentition (11 teeth on the shaft of the vomer in *E. merenda* rather than 3, and 5 intermaxillary teeth in a V-shaped patch rather than a single pair).

The illustration of the holotype of *Leptenchelys vermiformis* would indicate a major difference in head pores, but the illustration is grossly inaccurate. There are 7 rather than 11 pores in the preoperculomandibular series, and 6 rather than 8 in the sub- and postorbital series. The head pores of the type of *L. vermiformis,* except for minor differences of position, are much like those illustrated for *Ethadophis byrnei* and *E. merenda.*

It seems unlikely to us that the difference in structure of the caudal fin could be a growth character. The retention of caudal rays is a conservative character in the Ophichthidae. Even in *Sphagebranchus* and *Verma,* in which all other fins are absent, rudimentary caudal rays are retained. It is extremely unlikely that the absence of caudal rays is due to regeneration of the tail tip, since the last vertebra of the type of *Ethadophis merenda* is normal in appearance and almost identical to that of *E. byrnei.* The observed differences in dentition may be due to growth, but we have not observed changes of this magnitude following transformation in other ophichthids.

### *Leuropharus* n. gen.

*Diagnosis*

Dorsal and anal low, ending before tip of tail; tail tip hard and pointed. Pectorals absent. Gill openings low, converging forward and forming small anterolateral pouches; major axis horizontal; isthmus narrower than gill opening length. Dorsal origin at occiput. Head and trunk longer than tail. Snout, nape, and much of surface of jaws covered with papillae. Underside of snout not grooved. No teeth on shaft of vomer.

GENERIC TYPE: *Leuropharus lasiops* n. sp.

ETYMOLOGY: From the Greek λευρός (*leuros*), smooth, and φάρος (*pharos*; neuter), plow, in reference to the toothless vomerine shaft.

### *Leuropharus lasiops* n. sp.

Figs. 7, 8

Holotype and only known specimen, SU57313 (previously NYZS27134), a 174-mm individual from Manzanillo Bay, Mexico, collected in 30 fathoms by W. Beebe on the "Zaca," 22 November 1937.

DESCRIPTION (measurements in millimeters): Total length 174, head 18.4, trunk 85.0, tail 70.5, dorsal-fin origin 7.6, body depth at gill opening 6.4, at anus 6.0, snout 2.7, tip of snout to corner of mouth 4.7, eye diameter 1.1, left gill opening length 2.9, isthmus width 0.8. Vertebrae 135; 61 to anal origin.

Body elongate (depth at anus 29 in total length); laterally compressed, especially at trunk and tail. Head and trunk 1.7, head 9.5 in total length. Snout acute, rounded at tip. Lower jaw included, its tip well behind anterior nostrils. Eye large. Center of eye well behind midpoint of upper jaw. Anterior nostrils tubular; tube length about twice in eye diameter. Posterior

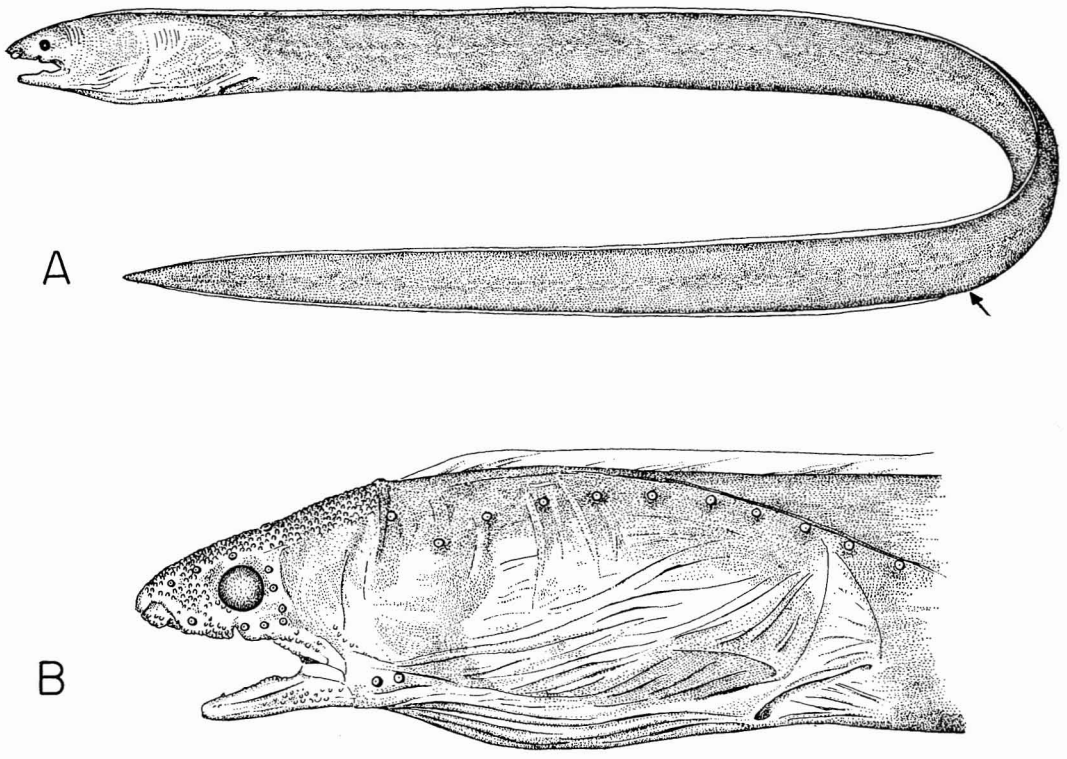


FIG. 7. Holotype of *Leuropharus lasiops* n.sp.; total length 174 mm. *A,* Side view; *B,* head region (right side, reversed).

nostrils open into mouth, visible as a slit beneath center of eye. Tongue adnate. Branchial basket expanded, free branchiostegals (jugostegalia) evident in radiograph. Numerous papillae densely covering nape, snout, and lips (Figs. 7*B,* 8).

Teeth small and pointed, hidden by folds of skin. Jaw teeth uniserial. An anterior intermaxillary tooth pair, followed by an intermaxillary patch of 6 teeth; vomerine shaft smooth, toothless. Roof of mouth papillose.

Head pores raised, larger than papillae; preoperculomandibular, temporal, suborbital, postorbital, and supraorbital series present. A single median temporal pore. Mandibular pores evenly spaced, 3 left, 4 right. Suborbital series of 4 pores, the fourth absent on left side of type. Lateral line beginning on head; canal visible as a straight line beneath skin. Total left lateral line pores 128, 9 before gill opening, 77 before anus. Last pore 0.23 head lengths before tail tip.

Dorsal and anal low, disappearing about a snout's length before tail tip.

Color in ethanol brown, lighter ventrally and on underside of head. Dorsal and anal fins white. A faint brown marbling flanking dorsal fin on head.

ETYMOLOGY: From the Greek λάριος (*lasios*), bearded, and ὤψ (*ops;* masculine, agrees in gender by decision of International Commission), face, in reference to the numerous papillae on the snout and lips.

### *Relationships*

On the basis of its external morphology, *Leuropharus* appears to be most closely related to those ophichthine genera with the dorsal-fin origin advanced, with low, forward-converging gill openings, with pectorals absent, and the head and body laterally compressed. Within the group, *Leuropharus* is most similar to *Aprognathodon* and *Callechelys*. The former genus is monotypic, but *Callechelys* contains at least 15 species. There is considerable variation within

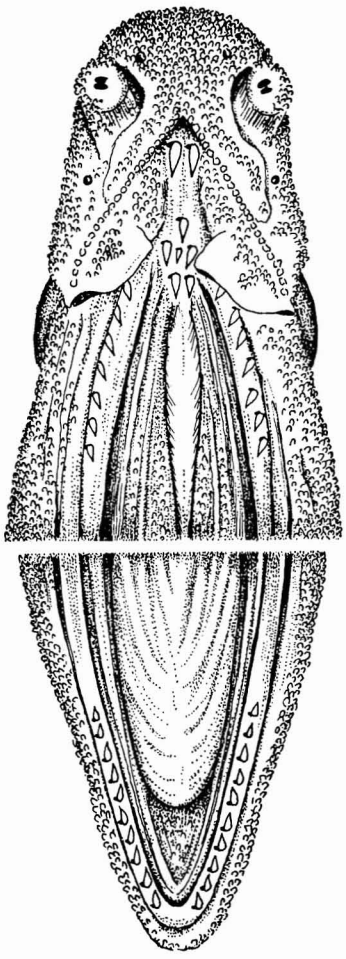

FIG. 8. Dentition of the holotype of *Leuropharus lasiops*.

*Callechelys* in fin height and angle of gill opening. It is likely that both *Aprognathodon* and *Leuropharus* are derived from species of *Callechelys*. Neither of the former genera has the groove on the snout characteristic of *Callechelys* species, but this need not preclude them as ancestors. The dense covering of papillae on the head of *Leuropharus* is unique in the family, but there are a few papillae between the posterior nostrils in certain species of *Callechelys*.

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